The clues of the drug repurposing

张戈

DRUG 1:Viagra(Sildenafil)

- **SIDER**

Side effects

Indications

Viagra& Clofazimine

- **Drugbank(target/enzymes/ transporters)**

  enzymes:

  Cytochrome P450 3A4

  General Function:Vitamin d3 25-hydroxylase activity

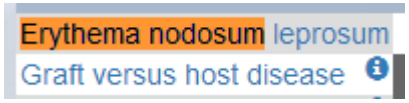
  Gene Name:CYP3A4

DRUG 2:thalidomide

- **SIDER**

Side effects

Indications



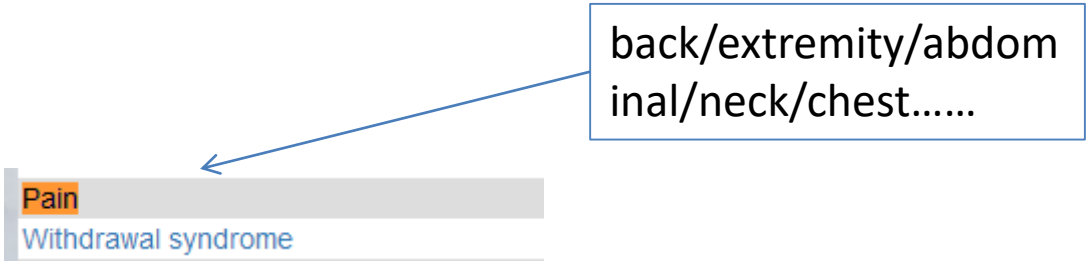
- **Drugbank**

  A piperidinyl isoindole originally introduced as a non-barbiturate hypnotic, but withdrawn from the market due to teratogenic effects. It has been reintroduced and used for a number of immunological and inflammatory disorders. Thalidomide displays immunosuppresive and anti-angiogenic activity. It inhibits release of tumor necrosis factor-alpha from monocytes, and modulates other cytokine action

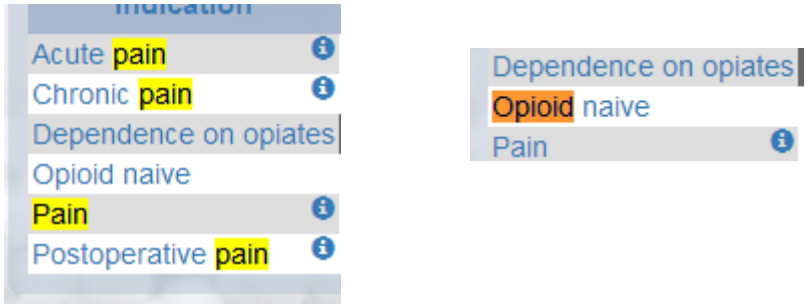
DRUG 3:buprenorphine

- **SIDER**

Side effects



Indications



- **Drugbank**

  Clinical Trials:

target 1: Mu-type opioid receptor(heroin)

General Function:Voltage-gated calcium channel activity

Gene Name:OPRM1

- **target 2**:Kappa-type opioid receptor

  General Function:Opioid receptor activity

  Gene Name:OPRK1

- **target 3**: Mu-type opioid receptor

  General Function:Voltage-gated calcium channel activity

  Gene Name:OPRM1

- **target 4:** Delta-type opioid receptor

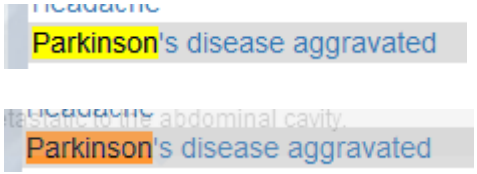
  General Function:Opioid receptor activity

  Gene Name:OPRD1

DRUG 4:requip

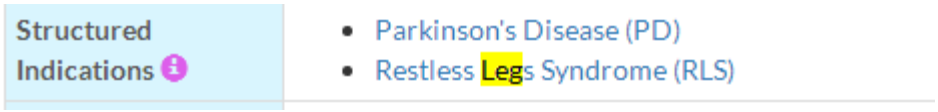
- **SIDER**

  Side effects



  Indications

- **Drugbank(NAME:Ropinirole)**



Ropinirole is a nonergot dopamine agonist with high relative *in vitro* specificity and full intrinsic activity at the D_2 subfamily of dopamine receptors, binding with higher affinity to D_3 than to D_2 or D_4 receptor subtypes. The relevance of D_3 receptor binding in Parkinson's disease is unknown. The mechanism of ropinirole-induced postural hypotension is presumed to be due to a D_2 -mediated blunting of the noradrenergic response to standing and subsequent decrease in peripheral vascular resistance.

Ropinirole&LI-301

- **Target**:5-hydroxytryptamine receptor 1A

  General Function:Serotonin receptor activity

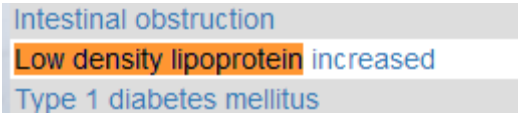
  Gene Name:HTR1A

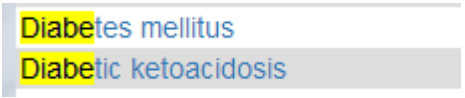
DRUG 5:colesevelam

- **SIDER**

Side effects

Indications





- **Drugbank**

Colesevelam is a bile acid sequestrant. Colesevelam is used with exercise and diet changes (restriction of cholesterol and fat intake) to reduce the amount of cholesterol and certain fatty substances in the blood. It works by binding bile acids in the intestine. Bile acids are made when cholesterol is broken down in the body. Removing these bile acids helps to lower blood cholesterol.

Pharmacology:

Structured Indications

- Heterozygous Familial Hypercholesterolemia
- Hyperlipidemias
- Type 2 Diabetes Mellitus (T2DM)

Clinical Trials:

- Type 2 Diabetes Mellitus (T2DM)
- Nonalcoholic Steatohepatitis
- Multiple Myeloma (MM)
- Chronic Liver Diseases (CLD)
- Type 2 Diabetes Mellitus (T2DM)
- Hypercholesterolaemia / Pre-Diabetes / Type 2 Diabetes Mellitus (T2DM)
- Hyperlipidemias / Type 2 Diabetes Mellitus (T2DM)
- Impaired Fasting Glucose (IFG) / PreDiabetes

target:

1. Bile acids

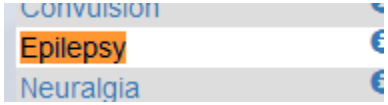
Kind	Group
Organism	Human
Pharmacological action	yes
Actions	binder

DRUG 6:gabapentin

- **SIDER**

Side effects

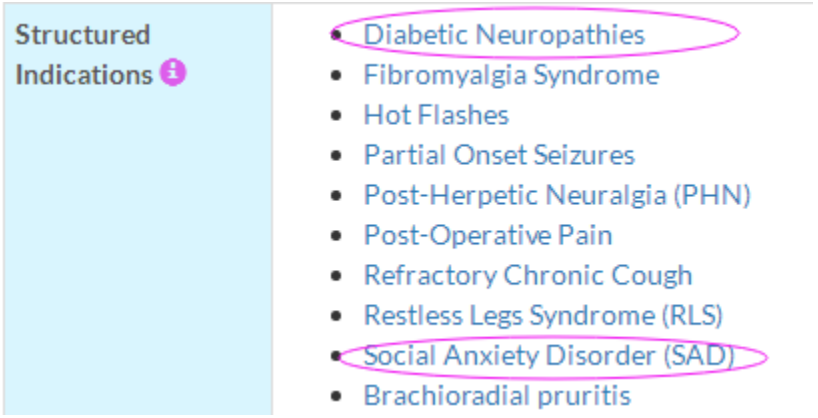
Indications



- **Drugbank**

Gabapentin (brand name Neurontin) is a medication originally developed for the treatment of epilepsy. Presently, gabapentin is widely used to relieve pain, especially neuropathic pain.

Pharmacology:



Clinical Trials:

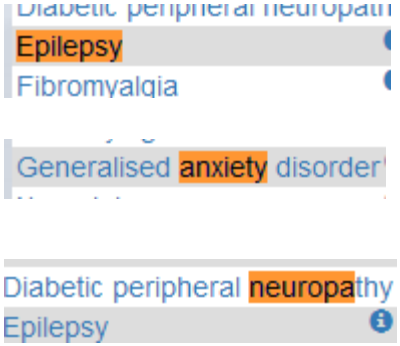
1	Completed	Not Available	Epilepsies
1, 2	Completed	Prevention	Anxiety / Pain

DRUG 7:pregabalin

- **SIDER**

Side effects

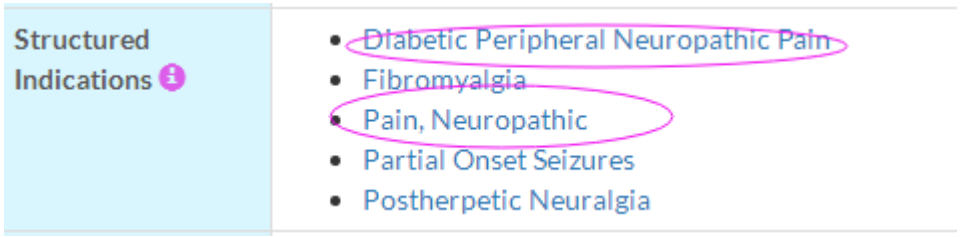
Indications



- **Drugbank**

  Pregabalin is an anticonvulsant drug used for neuropathic pain, as an adjunct therapy for partial seizures, and in generalized anxiety disorder

Pharmacology



DRUG 8:plerixafor

- **SIDER**

  Side effects

  Indications

- **Drugbank**

  Mechanism of action:

  Plerixafor inhibits the CXCR4 chemokine receptors on CD34+ cells and reversibly blocks binding of the ligand, stromal cell-derived factor-1-alpha (SDF-1α). By blocking the interaction between SDF-1α and CXCR4 with plerixafor, mobilization of progenitor cells is triggered. Filgrastim, a granulocyte-colony stimulating factor, is added to enhance CD34+ cell mobilization, thus increasing the yield of stem cells- an important determinant of graft adequacy.

- **Target**: C-X-C chemokine receptor type 4

  General Function:Virus receptor activity

  Gene Name:CXCR4

Uy GL, Rettig MP, Cashen AF: Plerixafor, a CXCR4 antagonist for the mobilization of hematopoietic stem cells. Expert Opin Biol Ther. 2008 Nov;8(11):1797-804. doi: 10.1517/14712598.8.11.1797 . [PubMed:18847313]

- Adjuvants, Immunologic
- Anti-HIV Agents
- Anti-Infective Agents
- Anti-Retroviral Agents
- Antineoplastic and Immunomodulating Agents
- Antiviral Agents
- HIV Fusion Inhibitors
- Receptors, CXCR4, antagonists & inhibitors